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J.D

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
|-----------------|-------------|----------------------|---------------------|

08/998,264 12/24/97 ARMAND

M UTSB:646

005514 IM22/0410  
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30 ROCKEFELLER PLAZA  
NEW YORK NY 10112

EXAMINER

CHANAY, C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1745

23

DATE MAILED:

04/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

**Commissioner of Patents and Trademarks**

|                              |                                      |                                      |
|------------------------------|--------------------------------------|--------------------------------------|
| <b>Office Action Summary</b> | Application No.<br><b>08/998,264</b> | Applicant(s)<br><b>Armand et al.</b> |
|                              | Examiner<br><b>Carol Chaney</b>      | Group Art Unit<br><b>1745</b>        |

Responsive to communication(s) filed on 1-18-01

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

Claim(s) 1-22, 24, 26-39, 41-59, 61, 62, 64, and 65 is/are pending in the application.

Of the above, claim(s) 1-22, 24, 50-59, and 61 is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 26-39, 41-49, 62, 64, and 65 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- Notice of References Cited, PTO-892
- Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- Interview Summary, PTO-413
- Notice of Draftsperson's Patent Drawing Review, PTO-948
- Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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***Request for Continued Examination***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-28-2000 has been entered.

***Summary***

2. Claims 1-22, 24, 26-39, 41-59, 61, 62, 64 and 65 are pending.

Claims 1-22, 24, 50-59 and 61 are withdrawn from consideration.

Claims 26-39, 41-49, 62, 64, 65 are under consideration.

Claims 26-39, 41-49, 62, 64, 65 are rejected under 35 USC 112 1st paragraph as introducing new matter into the specification.

Claims 28, 30, 31 and 62 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shackle (US Patent 5,721,070)

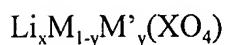
***Specification***

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3. The amendment filed 7-28-2000 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

In claim 62,

1) The use of M' in the cathode material claimed as:



and

2) The limitation  $0 \leq y \leq 0.2$

***Claim Rejections - 35 USC § 112***

4. Claims 26-39, 41-49, 62, 64, 65 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As discussed above, applicants' rewriting of the empirical formula for a cathode active material introduces new matter into applicants' claims.

Applicant is required to cancel the new matter in the reply to this Office action.

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***Claim Rejections - 35 USC § 102/103***

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
6. Claims 28, 30, 31 and 62 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shackle (US Patent 5,721,070) for essentially reasons of record.

Shackle discloses the compound LiMn(VO<sub>4</sub>) which corresponds to applicants' compound Li<sub>x</sub>M<sub>1-y</sub>M'<sub>y</sub>(XO<sub>4</sub>) when x = 1; y=0; M= Mn and X=V.

***Response to Arguments***

7. Applicant's arguments filed 7-28-2000 have been fully considered but they are not persuasive.

Applicants argue that grouping elements D, T, Q, and R together as M' merely simplifies the formula, and that 0≤y≤0.2 is supported by page 6 lines 2-3 of the specification. However, grouping the metals D, T, Q, and R together as M' broadens the scope of claims beyond that originally filed. Limitations as to amounts of the individual metals D, T, Q, and R are no longer specified when metals D, T, Q, and R are grouped together. With regards to the limitation 0≤y≤0.2, it is noted that the variable 'y' discussed on page 6 of applicants' specification does not describe the same quantity as the variable 'y' recited in claim 62. This may

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be seen in a comparison of the empirical compound formula originally disclosed in the specification and the formula disclosed in the amendments. Applicants' specification initially provides the formula:



Applicants' amended claim provides the formula



Using the subscript 'o' to identify the original specification variables, and the subscript 'a' to identify the amended claim variables, it can be seen that

$$x_o + y_o = x_a$$

$$y_o + d_o + t_o + q_o + r_o = y_a$$

Although applicants specification recites  $0 \leq y \leq 0.2$  at page 6 lines 2-3, this is in reference to ' $y_o$ ' rather than ' $y_a$ '. The recitation  $0 \leq y_a \leq 0.2$  is not supported by the original disclosure.

8. Applicant argues the compound  $\text{LiMn}(\text{VO}_4)$  disclosed by Shackle is not an ordered or modified olivine structure. Applicant notes page 675 of *Spectrochimica Acta*, 1974, 30A, 673-680 states

In addition, a few other compounds are also characterized by an olivine-like X-ray powder diagram; but the occurrence of some reproducible extra lines (not allowed in the olivine space group) strongly suggests that despite some structural analogies, the space group of these compounds is different from that of olivine.

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However, in discussing the compound LiMn(VO<sub>4</sub>) on page 685 of the same article, it is noted that

strictly speaking, these compounds are not olivines, **but they may be considered as having an olivine-like structure** and their vibrational spectrum may be compared to that of true olivine type compounds.

(Emphasis added.) An “olivine like structure” is considered to describe a “modified olivine structure” and thus LiMn(VO<sub>4</sub>) disclosed by Shackle meets the limitations of applicants’ claims.

### *Conclusion*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carol Chaney whose telephone number is (703) 305-3777. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette can be reached on (703) 308-0756. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

  
Carol Chaney  
Primary Examiner  
Art Unit 1745  
March 27, 2001